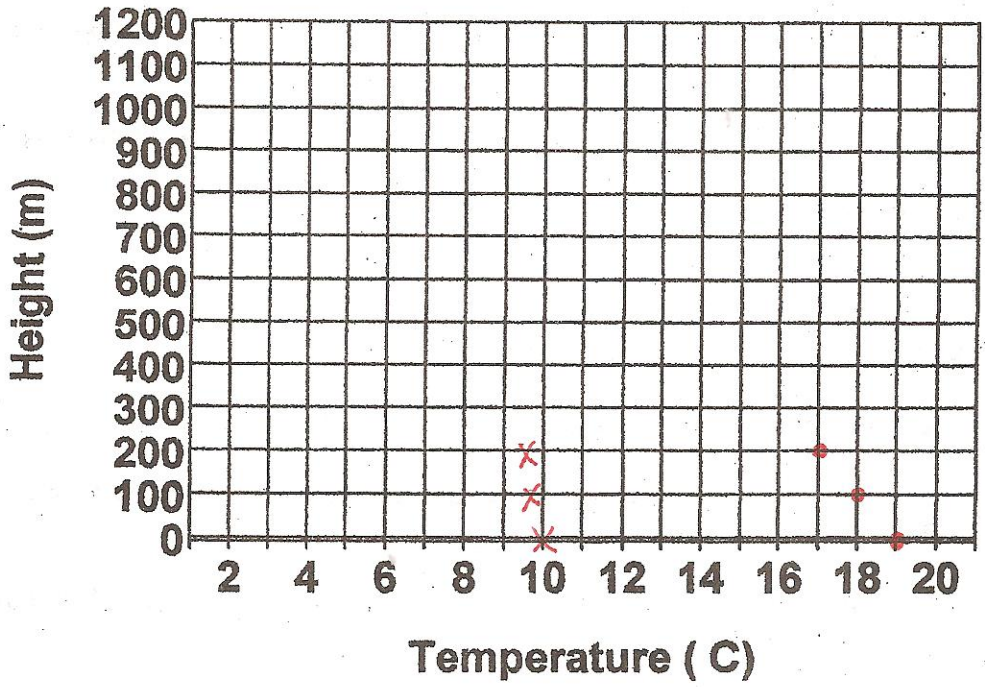
"At What Height do Clouds Form?"

Height (m)	Air Temperature (C)	Dew Point (C)
Surface	19.0 (−1) ↓	10.0 (−.17) ↓
100	18	9.83
200	17	9.66
300	16	9.49
400	15	
500	14	
600	13	
700	12	
800	11	
900	10	
1,000	9	
1,100	8	
1,200	7	

on graph
on graph
on graph

Finish + plot!



NAME: _____ DATE: _____

PERIOD: _____

GRAPHING: AT WHAT HEIGHT DO CLOUDS FORM?

When a cloud forms, water vapor condenses into water droplets. For this to happen, the air must cool down to the dew point. The base of a cloud marks the height at which condensation occurs. As air rises, it cools about 1 C for each 100 meter rise. The dew point decreases at a rate of 0.17 C for the same 100 meter rise. When the air temperature equals the dew point, condensation occurs and clouds form. In this exercise, you will graph the air temperature and the dew point to find the height that clouds form.

Procedure:

1. Complete the air temperature column (on the table) by subtracting 1 C from the surface temperature for each 100 meter rise.

2. Complete the dew point column by subtracting 0.17 C from the surface dew point for each 100 meter rise.

3. On the graph, plot the data that is in the table. Plot one line for the changing air temperature and one line for the changing dew point (use different colors).

4. Label the point where clouds form. That is the point where the two lines cross.

5. Answer the questions below.

Questions:

1. At what height, in meters (m), do clouds form? _____

2. What is that height in centimeters (cm)? _____ in kilometers (km)? _____

3. Suppose the dew point and air temperature lines crossed at a temperature below 0 C. What would the clouds be made of? _____

4. Suppose the dew point and air temperature lines crossed at the surface. What are those kind of clouds called? _____

5. What kind of relationship exists between air temperature and height (direct, inverse, or cyclic)? _____ How do you know this? _____

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